

Remarks

The Office Action of February 27, 2003, and the references cited therein, have been carefully considered.

In this Amendment, claim 3 has been amended to correct the informality courteously pointed out by the Examiner in the last Office Action, and new claims 4-7, dependent on claim 1, have been added to even more clearly and particularly define the invention.

The rejection of claim 3 under 35 U.S.C. § 112, second paragraph, as being indefinite has been noted. In view of the amendment thereto, it is submitted that this ground of rejection has clearly been overcome and should be withdrawn.

The rejection of claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by the patent to Reinsma has been noted, and is respectfully traversed. The present invention is directed to a slide ring seal, *i.e.*, a seal which is used with a rotating shaft. In such a seal, as is well known, the primary seal exists between a pair of radially extending surfaces of slide seal rings which are generally angled or L-shaped in cross-section. Such slide seal rings are shown at 4 and 5 in Figure 1 of the present application. The sealing forces for the slide seal rings are provided by generally trapezoidal, in cross-section, annular sealing bodies, shown, for example, at 2 and 3, which surround the axially extending legs of the respective seal rings 4 and 5. The present invention, as defined in claim 1, relates to only one of these slide seal rings, for example, ring 4, and, according to the invention, the

axially extending leg of the slide seal ring 4 is provided with a plurality of circumferentially spaced recesses at its free axial end, and a plurality of circumferentially spaced radially inwardly oriented extension are provided on the annular sealing body and project into the respective recesses provided in the leg to effect a form-locking connection between the slide ring and the annular sealing ring.

In attempting to read the limitation of claim 1 on the Reinsma patent, the Examiner has equated the ring 26 of Reinsma to the claimed slide seal ring. However, the ring 26 of Reinsma is not a slide seal ring and, in fact, does not slide on anything in the assembled state or provide any sealing function. Rather, this ring 26 is fixedly connected to the elastomeric body 27 (see line 52 (ff) of column 2 of the patent), and functions to mount the actual sealing element 21 of the seal of Reinsma.

Note that the seal assembly disclosed in the Reinsma patent is designed to seal an axially moving body 11 which, in contrast to the subject matter of the present application, functions as a sliding seal assembly for sealing a rotating body. In such seals, as pointed out above, the slide rings are made of metal and are pressed against each other via the resilient elastomeric bodies or claimed sealing bodies. On the other hand, the seal assembly according to the Reinsma patent only has one elastic seal ring, which is pressed with metal springs against the part 14 and is clearly not a "slide seal ring," as disclosed in the present application and as would be understood by those skilled in the art to which the present invention is directed. Note that the object of the present application is to

prevent the rotation of the elastomeric sealing bodies (2, 3). The seal, according to the Reinsma patent, does not disclose the presence of tortional forces, since it is not for a rotating body, and therefore would not provide any stimulus for solving the object according to the present invention. Accordingly, for the above-stated reasons, it is submitted that claims 1-3 are allowable over the Reinsma patent under 35 U.S.C. § 102(b).

The rejection of claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over the reference to Morely et al. in view of the patent to Reinsma likewise has been noted and is respectfully traversed. In this ground of rejection, the Examiner cited the Morely et al. patent, which does disclose a slide ring seal assembly with a pair of engaging slide rings. This reference has been discussed in the present application (paragraph 5, beginning on page 4). That is, the Morely et al. reference does disclose a slide ring seal assembly of the same general type as the present application. As recognized by the Examiner, the Morely et al. reference does not disclose the recesses, the inwardly oriented extensions forming part of the annular seal body, or that at least one of the recesses continues with an axially extended undercut provided in the leg, and receives one of the radially inwardly oriented extensions.

In order to overcome this deficiency in the Morely et al. reference, the Examiner has cited the Reinsma patent. However, as pointed out above, the Reinsma patent does not contain any slide ring and, moreover, is directed to an entirely different type of seal than that of the present

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application, *i.e.*, an axial seal as opposed to a radial seal, wherein the problems are entirely different.

Accordingly, not only does the Reinsma patent not teach the elements which were cited by the Examiner but, moreover, one skilled in the art would not consider combining the teachings of these two references since they are directed to entirely different types of seals. Accordingly, for the above-stated reasons, it is submitted that claims 1-3 of the present application are allowable over the combination of the Morely et al. and Reinsma patents under 35 U.S.C. § 103.

Newly present claims 4-7 are each dependent on claim 1 and, accordingly, are allowable over the cited prior art for at least the same reasons as that claim. New claim 4 more specifically defines the slide ring seal, *per se*, as being generally L-shaped and having a radially extending slide-sealing surface, which is clearly not the case according to the Reinsma reference. New claim 5 of the present application is dependent on new claim 4, and is directed to the embodiment of Figure 1, reciting both of the slide ring seals and both of the sealing bodies. Again, such is clearly not the case according to the Reinsma reference. New claims 6 and 7 are dependent on claim 1, and more specifically define the slide ring seal and the sealing body.

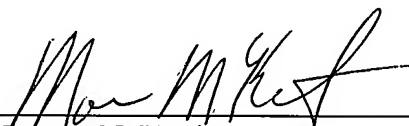
For the above-stated reasons, it is submitted that all of the pending claims, *i.e.*, claims 1-7, are allowable over the prior art of record and the application is in condition for allowance. Accordingly, such action and the passing of this application to issue are respectfully requested.

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If the Examiner is of the opinion that the prosecution of the application would be advanced by a personal interview, he is invited to telephone undersigned counsel and arrange for such an interview.

Respectfully submitted,

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